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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/427,078	10/26/1999	KENICHI SAWADA	018656-104	2696

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EXAMINER

YE, LIN

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/427,078

Applicant(s)

SAWADA ET AL.

Examiner

Lin Ye

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-17 and 20-29 is/are rejected.
- 7) ☒ Claim(s) 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 October 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 9/8/04 have been fully considered but they are not persuasive as to claims 6-17 and 20-23.

For claims 6, 11 and 17, the applicant argues the Komiya reference (U.S. Patent 6,097,430) does not teach or suggest that "said predetermined pattern corresponds to a pick-up resolution". The examiner disagrees. The pick-up resolution of image sensor corresponds to the distance of adjacent pixels; e.g., the distance between the center pixel to the adjacent pixels in high pick-up resolution are smaller than the distance between the center pixel to the adjacent pixels in low pick-up resolution. The Komiya reference discloses in Figure 3B, the aberration caused by the distance from the center pixel (the center of lens corresponds to the position of center pixel, this means that more aberration at the edge of sensor compared to at the central part of sensor); and in Figure 14B, shows a distorted state resulting from the aberration from a predetermined pattern (e.g., dots pattern, the center dot corresponds to center pixel of sensor, see Col. 12, lines 1-19), the aberration factors a_1 , a_2 for aberration correction is based on the distance from aberration pixel to center pixel (See equation 1, Col. 6, lines 40 and 48-58). Therefore, the high pick-up resolution of image sensor has less aberration from the adjacent pixels to the center pixel than the low pick-up resolution of image sensor. For those reasons, in order to obtain the high accurate aberration factors, the predetermined pattern disclosed by the Komiya reference corresponds to a pick-up resolution inherently.

2. Applicant's arguments with respect to new claims 24-29 filed on 9/8/04 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 6-8, 10-13 and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Komiya et al. U.S. Patent 6,097,430.

Referring to claim 6, the Komiya reference discloses in Figures 1-2, 14A-B and 15, an image pick-up device comprising: a sensor (image pickup element 60, See Col. 5, lines 12-15) which picks up an image through a lens (59); a setting unit (Aberration correction calculation section 48 and distortion aberration correction table 27, see Figure 15, See Col. 12, lines 15-19) which sets chromatic aberration factors (a1 and a 2) based on the image data picked from a predetermined pattern (See Figure 14A, nine slid dots as a pattern on a sheet 47, and see Col. 11, lines 65-67 and Col. 12, lines 1-4), wherein said predetermined pattern corresponds to a pick-up resolution (e.g., the pick-up resolution of image sensor corresponds to the distance of adjacent pixels; the distance between the center pixel to the adjacent pixels in high pick-up resolution are smaller than the distance between the center pixel to the

adjacent pixels in low pick-up resolution. The Komiya reference discloses in Figure 3B, the aberration cause by the distance from the center pixel - the center of lens corresponds to the position of center pixel, this means that more aberration at the edge of sensor compared to at the central part of sensor; an in Figure 14B, shows a distorted state resulting from the aberration from a predetermined pattern, e.g., dots pattern, the center dot corresponds to center pixel of sensor, see Col. 12, lines 1-19; the aberration factors a_1 , a_2 for aberration correction is bases on the distance from aberration pixel to center pixel, see equation 1, Col. 6, lines 40 and 48-58. Therefore, the high pick-up resolution of image sensor has less aberration from the adjacent pixels to the center pixel than the low pick-up resolution of image sensor. For those reasons, in order to obtain the high accurate aberration factors, the predetermined pattern disclosed by the Komiya reference corresponds to a pick-up resolution inherently); and a correction unit (distortion aberration correction section 28, see Figure 4A) which corrects image data picked up from an original image by using the chromatic aberration factors (a_1 and a_2) set by the setting unit (See Col. 7, lines 50-62).

Referring to claim 7, the Komiya reference discloses wherein the predetermined pattern is formed on a chromatic aberration board (sheet 47) as shown in Figure 14A.

Referring to claim 8, the Komiya reference discloses wherein the chromatic aberration board (47) is fixed in an area near a document platen (46) as shown in Figure 15.

Referring to claim 10, the Komiya reference discloses wherein the chromatic aberration factors (a_1 and a_2) are set for each color (RGB signals 13r, 13g and 13b, see Col. 8, lines 17-22) component (See Col. 7, lines 50-67).

Referring to claim 11, the Komiya reference discloses all subject matter as discussed with respected to same comment as with claim 6, and the reference also discloses memory (distortion aberration correction table 27), which stores the calculated chromatic aberration factors (a1 and a2, see Col. 6, lines 14-20).

Referring to claim 12, the Komiya reference discloses all subject matter as discussed with respected to same comment as with claim 7.

Referring to claim 13, the Komiya reference discloses all subject matter as discussed with respected to same comment as with claim 8.

Referring to claim 15, the Komiya reference discloses wherein the memory (23) is a line memory (having table 7 for storing the aberration factors a1 and a2, see Col. 12, lines 10-19).

Referring to claim 16, the Komiya reference discloses all subject matter as discussed with respected to same comment as with claim 10.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 9, 14, 17 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komiya et al. U.S. Patent 6,097,430 in view of Hyodo U.S Patent 6,219,463.

Referring to claims 9 and 14, the Komiya reference discloses all subject matter as discussed in respected claims 1 and 11, except that the reference does not explicitly state the predetermined pattern is a ladder pattern instead of nine solid dots pattern.

The Hyodo reference discloses in Figures 1 and 6-9, an image pickup device comprising: a line sensor (CCD 26) and the predetermined pattern is a ladder pattern (3b, See Col. 11, lines 5-9 and Figure 9) is formed on a chromatic aberration board (3) (the ladder pattern 3b can be used to calculating MTF characteristic for setting a range of chromatic aberration factors, See Col. 11, lines 6-9 and lines 31-35). The Hyodo reference is evidence that one of ordinary skill in the art at the time to see more advantages for the image pick-up system has more flexible options to choice varies predetermined pattern for determine the chromatic aberration factors based on the type of image sensor, specially, using ladder pattern when the image sensor is line sensor and using nine dots pattern when the image sensor is two-dimensional sensor. For that reason, it would have been obvious one of ordinary skill in the art at the time to see the imager pickup-device can use the ladder pattern to determine the chromatic aberration factors disclosed by Komiya.

Referring to claim 17, the Komiya reference discloses all subject matter as discussed in respected claim 1, except the reference does not explicitly show a determining unit which determines a character amount of the image data picked up from the pattern image and the chromatic aberration factors based on the character amount.

As discussed in claims 9 and 14, the Hyodo reference discloses a determining unit which determines a character amount the image data picked up from the pattern image (the ladder pattern 3b can be used to calculating MTF characteristic amount for setting a range of

chromatic aberration factors, See Col. 11, lines 6-9 and lines 31-35). The Hyodo reference is evidence that one of ordinary skill in the art at the time to see more advantages for the image pick-up system using the predetermined pattern to determines a character amount of the image data and setting chromatic aberration factors based on the character amount so that chromatic aberration can be brought into advantageous conditions within a range which can be set (i.e., because when the chromatic aberration increasing exceeds a specified rate with respect to reducing the image height as far as possible; so allow the image quality to be controlled a more stable state, see Col. 11, lines 46-54). For that reason, it would have been obvious to see the imager pickup-device including a determining unit which determines a character amount of the image data picked up from the pattern image and the chromatic aberration factors based on the character amount disclosed by Komiya.

Referring to claim 20, the Komiya and Hyodo references disclose all subject matter as discussed with respected to same comment as with claims 7 and 17.

Referring to claim 21, the Komiya and Hyodo references disclose all subject matter as discussed with respected to same comment as with claims 8 and 17.

Referring to claim 22, the Komiya and Hyodo references disclose all subject matter as discussed with respected to same comment as with claims 9 and 17.

Referring to claim 23, the Komiya and Hyodo references disclose all subject matter as discussed with respected to same comment as with claims 10 and 17.

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7. Claims 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komiya et al. U.S. Patent 6,097,430 in view of Hyodo U.S. Patent 6,219,463 and Kobayashi U.S. Patent 5,414,536.

Referring to claims 24 and 27, the Komiya and Hyodo references disclose all subject matter as discussed in respected claims 1 and 9, except that the references do not explicitly show a detail that the number of vertical lines of the ladder pattern corresponds to a ration of one for every n pixels in accordance with the pick-up resolution; and a width of the ladder pattern is equal to a width of a plurality of pixels in an auxiliary scanning direction and a length of the ladder pattern is equal to a length of an entire scanning span in a main scanning direction.

The Kobayashi reference teaches in Figures 2-5, an image pickup device has a ladder pattern (50, see Col. 4, lines 40-43) for using on the color image correction; the number of vertical lines of the ladder pattern (52, see Col. 4, lines 49-50) corresponds to a ration of one for every n pixels (one for every two pixels) in accordance with the pick-up resolution as shown in Figures 4-5; and a width of the ladder pattern (50) is equal to a width of a plurality of pixels in an auxiliary scanning direction (direction A) and a length of the ladder pattern is equal to a length of an entire scanning span in a main scanning direction (direction B) as shown in Figure 3. The Kobayashi reference is evidence that one of ordinary skill in the art at the time to see more advantages for the image pick-up system using a width of the ladder pattern is equal to a width of a plurality of pixels in an auxiliary scanning direction and a length of the ladder pattern is equal to a length of an entire scanning span in a main scanning direction; and the number of vertical lines of the ladder pattern corresponds to a ration of one

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for every n pixels to provide the image pick-up system capable of correcting the color image aberration more accurately and drawing high quality image information from an original image. For that reason, it would have been obvious one of ordinary skill in the art at the time to see the imager pickup-device can use the ladder pattern to determine the chromatic aberration factors; the number of vertical lines of the ladder pattern corresponds to a ration of one for every n pixels in accordance with the pick-up resolution; and a width of the ladder pattern is equal to a width of a plurality of pixels in an auxiliary scanning direction and a length of the ladder pattern is equal to a length of an entire scanning span in a main scanning direction disclosed by Komiya.

Referring to claims 25 and 28, the Komiya, Hyodo and Kobayashi references disclose all subject matter as discussed with respected to same comment as with claims 24 and 27.

Referring to claims 26 and 29, the Komiya, Hyodo and Kobayashi references disclose all subject matter as discussed with respected to same comment as with claims 24 and 27.

Allowable Subject Matter

8. Claims 18-19 are objected form the previous office action mailed on 7/22/2003 to as being dependent upon a rejected base claim 17, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

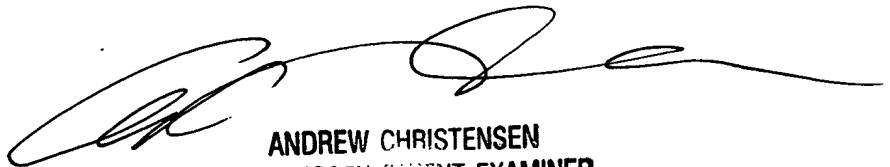
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lin Ye whose telephone number is (703) 305-3250. The examiner can normally be reached on Mon-Fri 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
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Lin Ye
January 10, 2005